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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/870,391	05/30/2001	Eric B. Cummings	8200-0007	7488

23980 7590 09/10/2003
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EXAMINER

KIM, AHSHIK

ART UNIT	PAPER NUMBER
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2876

DATE MAILED: 09/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/870,391

Applicant(s)

CUMMINGS ET AL.

Examiner

Ahshik Kim

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 11-16 is/are rejected.
- 7) ☒ Claim(s) 3,5-10 and 17-22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06/10/03 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Amendment

1. Receipt is acknowledged of the amendment filed on June 10, 2003. In the amendment,
5 claims 1, 2, 4, 5, 7-10, and 17-22 were amended. Currently claims 1-22 remain for examination.

Drawings

2. Four sheets of updated drawings (figures 1A, 1B, 2A, 2B, 3A, and 3B) were received on
June 10, 2003 along with the amendment. All drawings including updated sheets are approved.

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Claim Objections

3. Claims 11-13 were objected to under 37 CFR 1.75(c), as being of improper dependent
form for failing to further limit the subject matter of a previous claim. Applicant is required to
cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or
15 rewrite the claim(s) in independent form.

Re claims 11-13, the Examiner is well aware that the Applicants are attempting to claim
the code produced by the methods recited in 1, 2, and 4. However, Applicant is respectfully
suggested to rephrase these claims such that they are independent form or proper dependent
form, which would 'further limit' their respective parent claims.

- 20 Appropriate correction is required.

Claim Rejections - 35 USC § 102

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4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

5 (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 4, and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Lopresti et al. (US 5,862,270 - cited by the Applicants).

Lopresti et al. disclose a method of recording and printing information/user data on a
10 printed medium comprising encoding the information/user data to form an encoded user data array/stream (col. 6, lines 44+); modulating the user data array using a two-dimensional pseudo-random array and formatting the data array to produce a two-dimensional barcode array (col. 7, lines 9-36); printing the barcode array onto a portion of the printed medium (col. 7, lines 50+), wherein the recorded and printed user data is distributed evenly across the portion of the printed
15 medium (fig. 1), wherein the user data is encoded so that the user data array additionally comprises a fiducial signature, which is the "information embedded in the barcode that is used to correct the scanned image" (as defined by the Applicant: page 8, lines 27+) (col. 9, lines 20-41); the encoded information printed on the printed medium can be read for decoding purpose (figs. 6-12; col. 8, line 15 through col. 12, line 43).

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Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

25 (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the
5 claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various
claims was commonly owned at the time any inventions covered therein were made absent any
evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out
the inventor and invention dates of each claim that was not commonly owned at the time a later
invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c)
10 and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lopresti et
al. in view of Wang et al (US 5,337,361). The teachings of Lopresti et al. have been discussed
above.

Re claims 14 and 15, Lopresti et. al has been discussed above but fails to teach or fairly
15 suggest that up to 80% of the barcode has been obfuscated by overlaid text or graphics.

Wang et al. teach an encoded barcode 318 printed on a printed medium 316 has been
obfuscated by overlaid by a graphic image 317 (fig. 1B; col. 4, lines 52+).

It would have been obvious to an artisan of ordinary skill in the art at the time the
invention was made to incorporate the teachings of Wang et al. into the teachings of Lopresti et
20 al. in order to provide Lopresti et al. with a more security system, preventing the encoded
information from being manipulated by an unauthorized user in the event of fraudulent use of the
printed medium (i.e., damaging or changing the graphic image will automatically
damaging/changing the encoded information and vice versa). Furthermore, such modification

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would have been an obvious extension as taught by Lopresti et al., and therefore an obvious expedient.

Re claim 16, Lopresti et al. as modified by Wang et al. have been discussed above but fails to teach or fairly suggest the obfuscation is caused by damage or partial destruction of the printed medium.

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the above modification into the teachings of Lopresti et al./Wang et al in order to provide Lopresti et al/Wang et al with a more reliable system wherein the lost/damaged/distorted information can be recovered, and thus providing a more user-friendly system wherein the user does not have to concern about losing data in the event of accidentally damaging the printed medium.

Allowable Subject Matter

9. Claims 3, 5-10, and 17-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: the claims are directed at two-dimensional barcode, particularly to a spread-spectrum barcode that allows the barcode to be read in its entirety even if some parts of the barcode is obscured. As previously and currently cited, it is the Examiner's view that the references to Lopresti and Wang, taken alone or in combination, read on the subject matter recited in claims 1, 2, 4, 11-13 14-16. However, the cited references fail to teach particular methods wherein the code

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recognizes texture and pattern of fiducial data; and the fiducial data further modulated with its own pseudo-random kernel. The method further discloses demodulating the source data utilizing two different (but related) pseudo-random kernels more than once as set forth in the claims.

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Response to Remarks/Arguments

11. In response to regarding figure 21 of US 20020179717 (instant application published in US PG-PUB (pre-grant publication)), it is unfortunate that scanning documents/figures into the system, let alone improving resolution of a figure, is beyond the Examiner's capacity. Applicant is encouraged to contact the department for printing or pre-grant publications.

10

In terms of the merits of the application, contrary to Applicant's view that the Lopresti patent discloses code based on "clocking", Lopresti teaches a pixel-based two-dimensional code (see abstract) requiring many intermediate steps (see figure 4) such as compression, randomization, and thresholding. As a brief glance of the title indicates, it is "clock free" two-dimensional barcode and method for printing and reading the same (col. 2, lines 54+). Examiner further notes that the code contains gray-scale images in addition to black and white code (col. 8, lines 24+).

15

Although Lopresti does not use the term "kernel", if all the data fields in the two dimensional array is applied with known values (during the randomization process which can be reverted), collection of applied values would constitute something similar to "kernel" which the Applicants claim in the instant application. One can obviously say that the data array is superimposed or modulated with the template array. In view of the above, it is the Examiner's

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opinion that Lopresti patent teaches "demodulating the source data with kernel" as recited in the claims.

However, upon careful review of the claims and teachings disclosed in the cited references, some claims contain allowable subject matter if they are written in proper forms containing all the limitations of the parent claims. Examiner notes that the Applicants did not amend claims in substantial manner to warrant further search and consideration. In view of the above, this Office Action is made non-final.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Ahshik Kim* whose telephone number is (703)305-5203 . The examiner can normally be reached between the hours of 6:00AM to 3:00PM Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee, can be reached on (703) 305-3503. The fax number directly to the Examiner is (703) 746-4782. The fax phone number for this Group is (703)308-7722, (703)308-7724, or (703)308-7382.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [ahshik.kim@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.



Ahshik Kim
Patent Examiner
Art Unit 2876
September 4, 2003



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